Understanding the costs of forestry practices is an important piece of any management plan. *Forest Farmer* magazine first reported the results of a survey of forestry practices costs in 1953. Starting in 1962, the survey was conducted every three to five years. Since 1982, the survey has been conducted on two-year intervals. The results presented here represent the twenty-second version of this report, which summarizes 2012 forestry practices costs in the South.

**Methods**

The tables in this report follow standards from previous surveys and are based on the responses to a questionnaire sent in the winter of 2013 to 212 individuals, private firms, and public agencies from fourteen southern states. Respondents were asked to provide a detailed breakdown of their costs for ten major forestry practices. For this current survey, twenty-two surveys were returned as undeliverable for a total of 190 surveys distributed. Of those, twenty-eight questionnaires were completed and returned, for a response rate of 15 percent.

Tables 1 through 10 summarize costs for each of the forestry practices included in the survey. Total costs are presented by region and by treatment or method on a per acre basis, with the exception of planting costs, which are also presented on a per seedling planted basis. Overall average costs are also included in the tables. All costs presented include inflation.

Tables 11 through 13 summarize the general cost trends of various forestry practices in the South. Table 11 summarizes the cost of forestry practices from 1952 to 2012. Table 12 shows the cost changes from the 2008 and 2010 surveys, including inflation. Table 13 compares the southern forestry practices cost indices to forest products price indices from 1967 to 2012.

For this survey, three physiographic regions in the South were considered (figure 1):

- **Southern Coastal Plain**, the area south of the Fall Line and the Savannah River
- **Northern Coastal Plain**, the area east of the Fall Line and north of the Savannah River
- **Piedmont**, the region in the Southeast between the Fall Line and the mountains plus the upland areas from Alabama westward through Arkansas.
Results
Response to the 2012 survey decreased from 2010 by 28 usable surveys. Of the 28 questionnaires considered usable, 43 percent were from consultants, 29 percent were from timber investment management organizations, 21 percent were from the forest industry, and 7 percent were from public agencies. This is a notable shift from the 2010 survey in which 23 percent of the surveys were from public agencies, 28 percent were from the forest industry, and 42 percent were from consultants.

Mechanical Site Preparation
Thirty-nine percent of respondents to the survey reported that they did not conduct any type of mechanical site preparation in 2012. The 61 percent of respondents who reported using mechanical site preparation operations completed these activities on slightly more than 42,000 acres (table 1). Mechanical site preparation operations were balanced between multipass and single pass operations, which were reported at 53 and 47 percent, respectively. The most frequently reported mechanical site preparation used some form of bedding (57 percent). The average per acre cost for all types of mechanical site preparation was $168.13.

Planting
Overall hand planting costs (excluding seedling costs) of all bareroot pines on cutover lands were $55.67 per acre, 28 percent higher than in 2010 (table 2). Respondents reported planting an average of 491 bareroot, pine seedlings per acre in 2012, similar to the 496 reported in 2010. The majority of all bareroot pine seedlings planted were loblolly pines (Pinus taeda). Bareroot slash pine (Pinus elliottii) was also planted, but not in sufficient quantity to list separately in this report. Overall average cost per thousand reported for bareroot pine seedlings in 2012 was $48.69.

Planting of containerized seedlings reported by survey respondents decreased in 2012 to 3,338 acres (table 2). Continuing a trend from the 2008 and 2010 surveys, sufficient numbers of containerized longleaf pine (Pinus palustris) seedlings were planted to warrant reporting. Longleaf pine seedlings were planted at an average per acre density of 629 trees per acre. The overall average cost of these plantings was $90.36 per acre. Containerized longleaf pine seedlings averaged $174 per thousand in 2012. The average reported cost per thousand for containerized pine seedlings regardless of species was $172.16.

Machine planting was used on more than 15,000 acres, with respondents only reporting the practice being done in the southern coastal plain (table 2). The majority of all machine-planted acres were in bareroot loblolly pine seedlings. Per acre, machine planting of bareroot pines was reported to cost more per acre ($256.57), and planting densities were higher (569 seedlings per acre) than hand planting in the region.

Prescribed Burning
The overall cost of all types of burning increased to $32.42 per acre from the $25.79 per acre reported in 2010 (table 3). A total of more than 46,000 acres were reported as having been prescribed burned. All of the acres reported as being prescribed burned were treated using a ground drip torch. The majority (59 percent) of the acres prescribed burned were burned for midrota-
Table 2. Hand and machine planting cost per acre and per seedling for cutover pine sites

<table>
<thead>
<tr>
<th>Planting Method</th>
<th>Acres</th>
<th>Southern Coastal Plain</th>
<th>Northern Coastal Plain</th>
<th>Piedmont</th>
<th>Overall Average Planting Cost</th>
<th>Overall Average Seedlings/Acre</th>
<th>Cost per Seedling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand planting, cutover land, loblolly pine, bareroot</td>
<td>47,609</td>
<td>61.24</td>
<td>40.59</td>
<td>78.59</td>
<td>54.66</td>
<td>487</td>
<td>0.114</td>
</tr>
<tr>
<td>Hand planting, cutover land, all pine, bareroot</td>
<td>48,761</td>
<td>62.78</td>
<td>40.59</td>
<td>78.59</td>
<td>55.67</td>
<td>491</td>
<td>0.114</td>
</tr>
<tr>
<td>Hand planting, cutover land, longleaf pine container</td>
<td>3,338</td>
<td>94.26</td>
<td>*</td>
<td>59.86</td>
<td>90.36</td>
<td>650</td>
<td>0.141</td>
</tr>
<tr>
<td>Hand planting, cutover land, all pine container</td>
<td>3,827</td>
<td>96.33</td>
<td>*</td>
<td>59.86</td>
<td>92.72</td>
<td>626</td>
<td>0.147</td>
</tr>
<tr>
<td>Machine planting, cutover land, loblolly pine, bareroot</td>
<td>10,260</td>
<td>102.95</td>
<td>**</td>
<td>**</td>
<td>102.95</td>
<td>540</td>
<td>0.192</td>
</tr>
<tr>
<td>Machine planting, cutover land, all pine, bareroot</td>
<td>15,676</td>
<td>139.95</td>
<td>**</td>
<td>**</td>
<td>139.45</td>
<td>569</td>
<td>0.241</td>
</tr>
</tbody>
</table>

* Too few responses  ** Activities not reported in this region

Chemical treatments included in this report consisted of various herbicide application methods to control herbaceous and woody plants. The number of acres treated with chemicals reported in 2012 decreased to 109,145 or a little more than half the number of acres reported in 2010 (table 4). Eighty-two percent of respondents reported using chemical applications with an overall average cost of $55.12 per acre. Forty-two percent of the acres reported were treated for site preparation, 37 percent for herbaceous weed control, 13 percent for midrotation release, and 8 percent for early release. The main method of chemical application was aerial (64 percent) with the remaining acres having chemicals applied by backpack (19 percent) and ground-based methods (18 percent). Average cost of all aerial application methods for site preparation, weed control, and release activities was $61.63 per acre. Almost all of the chemical treatment operations were completed by contractors.
Table 3. Burning treatment costs by ignition method

<table>
<thead>
<tr>
<th>Ignition Type</th>
<th>Burning Purpose</th>
<th>Acres Reported</th>
<th>Southern Coastal Plain</th>
<th>Northern Coastal Plain</th>
<th>Piedmont</th>
<th>Overall Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground drip torch</td>
<td>After chemical site preparation</td>
<td>16,293</td>
<td>53.44</td>
<td>*</td>
<td>38.82</td>
<td>51.26</td>
</tr>
<tr>
<td>Ground drip torch</td>
<td>Mid rotation hardwood control</td>
<td>27,402</td>
<td>21.08</td>
<td>*</td>
<td>*</td>
<td>21.12</td>
</tr>
<tr>
<td>All types</td>
<td>All</td>
<td>46,203</td>
<td>32.21</td>
<td>26.32</td>
<td>38.26</td>
<td>32.42</td>
</tr>
</tbody>
</table>

* Too few responses  ** Activities not reported in this region

Table 4. Chemical treatment cost per acre by treatment purpose and application method

<table>
<thead>
<tr>
<th>Treatment Purpose</th>
<th>Application Method</th>
<th>Acres Reported</th>
<th>Southern Coastal Plain</th>
<th>Northern Coastal Plain</th>
<th>Piedmont</th>
<th>Overall Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site preparation</td>
<td>Aerial</td>
<td>36,832</td>
<td>89.41</td>
<td>47.88</td>
<td>78.63</td>
<td>73.59</td>
</tr>
<tr>
<td>Site preparation</td>
<td>Ground machine (broadcast)</td>
<td>8,992</td>
<td>66.94</td>
<td>*</td>
<td>**</td>
<td>69.86</td>
</tr>
<tr>
<td>Herbaceous weed control</td>
<td>Aerial</td>
<td>18,518</td>
<td>51.38</td>
<td>**</td>
<td>*</td>
<td>50.74</td>
</tr>
<tr>
<td>Herbaceous weed control</td>
<td>Backpack</td>
<td>20,271</td>
<td>*</td>
<td>*</td>
<td>**</td>
<td>15.45</td>
</tr>
<tr>
<td>Early release</td>
<td>Aerial</td>
<td>8,307</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>31.97</td>
</tr>
<tr>
<td>Mid rotation release</td>
<td>Aerial</td>
<td>5,454</td>
<td>76.41</td>
<td>**</td>
<td>*</td>
<td>65.89</td>
</tr>
<tr>
<td>All types</td>
<td>All</td>
<td>109,145</td>
<td>66.43</td>
<td>30.30</td>
<td>66.36</td>
<td>55.12</td>
</tr>
</tbody>
</table>

* Too few responses  ** Activities not reported in this region

Table 5. Fertilization cost per acre

<table>
<thead>
<tr>
<th>Time of Application</th>
<th>Application Method</th>
<th>Acres Reported</th>
<th>Southern Coastal Plain</th>
<th>Northern Coastal Plain</th>
<th>Piedmont</th>
<th>Overall Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plantation establishment</td>
<td>All</td>
<td>30,204</td>
<td>104.95</td>
<td>*</td>
<td>*</td>
<td>87.03</td>
</tr>
<tr>
<td>Established stand</td>
<td>All</td>
<td>21,031</td>
<td>70.16</td>
<td>*</td>
<td>*</td>
<td>63.28</td>
</tr>
<tr>
<td>All</td>
<td>Aerial</td>
<td>16,053</td>
<td>74.87</td>
<td>*</td>
<td>*</td>
<td>75.41</td>
</tr>
<tr>
<td>All</td>
<td>All</td>
<td>52,735</td>
<td>76.91</td>
<td>*</td>
<td>*</td>
<td>86.33</td>
</tr>
</tbody>
</table>

* Too few responses  ** Activities not reported in this region
**Fertilization**

Twenty-nine percent of respondents reported using fertilization on a total of 52,735 acres, costing $86.33 per acre (table 5). Fifty-seven percent was for plantation establishment fertilization at an average price per acre of $87.03. Forty percent of respondents reported established stand fertilization at an average cost of $63.28. The primary method of fertilization in 2012 was ground or broadcast application (70 percent), with aerial and band/spot application representing the remaining acres. Most respondents reported that they treated their forests with diammonium phosphate (DAP) or DAP + Urea. All fertilizer application was completed by contractors.

**General Fire Protection**

Fire protection costs include those associated with detection of, the ability to respond to, and suppression of wildfires. Fourteen percent of respondents reported general fire protection totaling approximately 1.4 million acres. The weighted average of per acre cost for general fire protection was $0.66 per acre (table 6). This is a significant reduction from the $2.11 per acre cost reported in 2010.

**Timber Cruising**

Survey respondents reported that 416,910 acres were cruised with an average per acre cost for all cruising types of $13.20 (table 7). Costs per acre for all cruising types were reported to range from a low of $3.00 to a high of $25.00. Approximately three-fourths of those responding used point sampling that cost, on average, $15.50 per acre. The other predominant method used was 1/10-acre plot-based cruises costing an average of $6.13 per acre. The highest per acre cruising costs, regardless of purpose, were in the Piedmont region. When cruising purpose is considered, respondents stated that the majority of their cruising was for inventory and reconnaissance work, followed by timber or timberland sales and acquisitions. The majority of the acres reported were cruised by company crews.

**Timber Marking**

Eighteen percent of respondents reported marking timber. Survey respondents marked 70,851 acres of timber in 2012 (table 8). The overall average price for marking timber decreased in 2010 from $48.80 to $41.53 per acre. Ninety-two percent of the reported acres were marked for thinning plantation stands and 89 percent of the reported acres were for marking multiple products on the same pass. All of the operations were conducted by company crews.

**Precommercial Thinning**

Respondents reported 11,743 acres being treated with precommercial thinning in 2012 (table 9). Overall average cost per acre was $50.27 per acre, more than three times less than the $166.66 reported in 2010. This is due in large part to variability of prices reported, which ranged from more than $200 per acre to less than $40 per acre. The majority of acres were thinned using the rolling chop method. Other popular tree removal methods were completed by mowing, mulching, or cutting with chainsaws. The cost per acre ranged from $38.00 to $236.00. All operations were completed by contractors.

**Custodial Management**

Custodial management costs may include items such as boundary line maintenance, road construction, and insect and disease management, but they are not limited to these activities. Thirty-six respondents reported custodial management costs on slightly more than 1 million acres (table 10). Custodial management costs ranged from $2.00 to $20.00 per acre with the overall average cost of $6.07 per acre.

**Changes 1952-2012**

**Changes reflected in current dollars**

Costs of major forestry practices surveyed from 1952 to 2012 are presented in table 11. The majority of practices reported here were part of the original survey.

---

**Table 6. General fire protection cost per acre**

<table>
<thead>
<tr>
<th>Acres Reported</th>
<th>Southern Coastal Plain</th>
<th>Northern Coastal Plain</th>
<th>Piedmont</th>
<th>Overall Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,400,000</td>
<td>*</td>
<td>*</td>
<td>**</td>
<td>0.66</td>
</tr>
</tbody>
</table>

* Too few responses  ** Activities not reported in this region
Table 7. Timber cruising cost per acre

<table>
<thead>
<tr>
<th>Timber Cruising Purpose</th>
<th>Acres Reported</th>
<th>Southern Coastal Plain</th>
<th>Northern Coastal Plain</th>
<th>Piedmont</th>
<th>Overall Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>**</td>
<td>**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Method: All plot sampling</td>
<td>100,823</td>
<td>6.13</td>
<td>**</td>
<td>**</td>
<td>6.13</td>
</tr>
<tr>
<td>Method: Point sampling 10 BAF</td>
<td>271,542</td>
<td>16.07</td>
<td>*</td>
<td>19.37</td>
<td>16.20</td>
</tr>
<tr>
<td>Method: All point sampling</td>
<td>313,942</td>
<td>15.37</td>
<td>*</td>
<td>19.37</td>
<td>15.50</td>
</tr>
<tr>
<td>Purpose: All inventory/reconnaissance</td>
<td>341,002</td>
<td>13.57</td>
<td>*</td>
<td>*</td>
<td>13.75</td>
</tr>
<tr>
<td>Purpose: All sale/acquisition</td>
<td>202,753</td>
<td>21.51</td>
<td>*</td>
<td>19.22</td>
<td>21.39</td>
</tr>
<tr>
<td>Purpose: All appraisal</td>
<td>45,675</td>
<td>10.62</td>
<td>*</td>
<td>*</td>
<td>10.60</td>
</tr>
<tr>
<td>All</td>
<td>416,910</td>
<td>13.06</td>
<td>*</td>
<td>19.22</td>
<td>13.20</td>
</tr>
</tbody>
</table>
* Too few responses ** Activities not reported in this region

Table 8. Timber marking costs per acre

<table>
<thead>
<tr>
<th>Timber Marking Purpose</th>
<th>Acres Reported</th>
<th>Southern Coastal Plain</th>
<th>Northern Coastal Plain</th>
<th>Piedmont</th>
<th>Overall Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>**</td>
<td>**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All</td>
<td>67,351</td>
<td>43.36</td>
<td>**</td>
<td>*</td>
<td>43.48</td>
</tr>
</tbody>
</table>
* Too few responses ** Activities not reported in this region

Table 9. Precommercial thinning cost per acre

<table>
<thead>
<tr>
<th>Precommercial Thinning Method</th>
<th>Acres Reported</th>
<th>Southern Coastal Plain</th>
<th>Northern Coastal Plain</th>
<th>Piedmont</th>
<th>Overall Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>**</td>
<td>**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All</td>
<td>11,743</td>
<td>153.55</td>
<td>*</td>
<td>*</td>
<td>50.27</td>
</tr>
</tbody>
</table>
* Too few responses ** Activities not reported in this region

Table 10. Custodial management cost per acre

<table>
<thead>
<tr>
<th>Acres Reported</th>
<th>Southern Coastal Plain</th>
<th>Northern Coastal Plain</th>
<th>Piedmont</th>
<th>Overall Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>**</td>
<td>**</td>
<td>4.51</td>
<td>6.07</td>
</tr>
</tbody>
</table>
* Too few responses ** Activities not reported in this region

with the exception of precommercial thinning costs, which have been reported since 1976, and fertilization costs, which were included for the first time in 1984. Costs for fertilization in 1984 were adjusted, according to the Producer Price Index—All Commodities in order to establish a cost for the base year 1982. These are average dollar costs from each survey and are based on observations for all regions of the South. All costs are presented on a per acre basis except planting costs, which are also reported on a per seedling basis.
The overall average percentage changes are nominal values that include inflation. Comparisons to 2010 averages show that six of the nine practices showed cost increases in 2012 (table 12). The largest increase, relative to 2010, was timber cruising where respondents reported costs more than doubling. The second largest increase was shown for machine planting, which recorded an increase of 64 percent. The largest decrease reported was for precommercial thinning, which recorded a decrease of 70 percent. Price changes from the 2008 survey shows similar price change trends with the exception of fertilization that showed a 37 percent increase relative to 2010, but a 22 percent decrease relative to 2008.

**Cost changes related to price changes**

Table 13 presents changes in forestry costs from 1967 through 2012 as related to the general wholesale price level (Producer Price Index—PPI) and the softwood lumber index. These indices provide a basis for comparing the costs of selected forestry practices with both forest product prices and with general economic trends. The softwood lumber price index was used instead of stumpage prices, because the lumber price index is more broadly based and may give a more reliable picture of price trends.

When comparing the costs of selected forestry practices with the price index, note that changes for most practices since the 2010 survey were higher than the increase in the PPI. However, when looking at changes since the 2008 survey, changes in chemical application (13 percent), prescribed burning (11 percent), and hand planting (6 percent) showed increases that were in line with the increases in the PPI. The softwood lumber price index increased less than the PPI since 2010 and more than PPI since 2008.

It is important to note that the number of responses to the 2012 survey was down dramatically from prior years. This was due, in part, to a notable decline over previous years in responses by public agencies. When the 2012 survey was mailed, the threat of the US Congress allowing budget sequestration to go into effect was looming, and there was uncertainty in many government sectors. This may have prevented many offices that had participated in the past from completing the current survey. Sample size should be increased for future surveys with the hope of increasing the number of useable responses.

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**Table 11. Costs per acre except planting, which is per seedling, of major forestry practices in the South as surveyed for selected years from 1952 to 2012, in US dollars.**

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescribed burning</td>
<td>0.21</td>
<td>1.60</td>
<td>3.65</td>
<td>4.12</td>
<td>4.84</td>
<td>8.10</td>
<td>10.57</td>
<td>16.58</td>
<td>14.41</td>
<td>24.94</td>
<td>29.31</td>
<td>25.79</td>
<td>32.42</td>
</tr>
<tr>
<td>Removing undesirable trees (chemically)</td>
<td>5.01</td>
<td>10.17</td>
<td>23.41</td>
<td>40.65</td>
<td>65.61</td>
<td>63.7</td>
<td>67.41</td>
<td>72.32</td>
<td>70.18</td>
<td>48.82</td>
<td>47.68</td>
<td>55.12</td>
<td></td>
</tr>
<tr>
<td>Timber cruising</td>
<td>0.30</td>
<td>0.75</td>
<td>1.18</td>
<td>2.18</td>
<td>3.27</td>
<td>2.02</td>
<td>2.09</td>
<td>4.10</td>
<td>5.40</td>
<td>5.23</td>
<td>6.28</td>
<td>6.56</td>
<td>13.20</td>
</tr>
<tr>
<td>Marking trees for harvesting</td>
<td>0.60</td>
<td>3.09</td>
<td>8.05</td>
<td>14.02</td>
<td>10.57</td>
<td>8.47</td>
<td>14.19</td>
<td>15.06</td>
<td>65.09</td>
<td>58.26</td>
<td>86.99</td>
<td>48.40</td>
<td>43.48</td>
</tr>
<tr>
<td>Mechanical site preparation</td>
<td>5.25</td>
<td>23.52</td>
<td>73.33</td>
<td>114.04</td>
<td>94.21</td>
<td>87.45</td>
<td>100.74</td>
<td>122.14</td>
<td>166.5</td>
<td>119.72</td>
<td>157.32</td>
<td>139.95</td>
<td>168.13</td>
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<tr>
<td>Planting</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>by hand</td>
<td>0.0111</td>
<td>0.0228</td>
<td>0.0534</td>
<td>0.0484</td>
<td>0.0524</td>
<td>0.0597</td>
<td>0.0587</td>
<td>0.0670</td>
<td>0.0800</td>
<td>0.0863</td>
<td>0.1079</td>
<td>0.1187</td>
<td>0.1144</td>
</tr>
<tr>
<td>by machine</td>
<td>0.0074</td>
<td>0.0159</td>
<td>0.0384</td>
<td>0.0540</td>
<td>0.0439</td>
<td>0.0452</td>
<td>0.0592</td>
<td>0.0593</td>
<td>0.1100</td>
<td>0.1168</td>
<td>0.1386</td>
<td>0.1469</td>
<td>0.2411</td>
</tr>
<tr>
<td>Precommercial thinning</td>
<td>25.97</td>
<td>49.27</td>
<td>52.44</td>
<td>55.43</td>
<td>79.05</td>
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<tr>
<td>Fertilization</td>
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<td>36.03</td>
<td>39.29</td>
<td>41.01</td>
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<td>56.04</td>
<td>77.98</td>
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<td>62.79</td>
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### Table 12. Changes in cost of forestry practices in the South from 2008 to 2012 and 2010 to 2012

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<tr>
<th>Forestry Practice</th>
<th>Overall Average % Change 2008-2012</th>
<th>Overall Average % Change 2010-2012</th>
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</thead>
<tbody>
<tr>
<td>Prescribed burning</td>
<td>10.6%</td>
<td>25.7%</td>
</tr>
<tr>
<td>Removing undesirable trees (chemically)</td>
<td>12.9%</td>
<td>15.6%</td>
</tr>
<tr>
<td>Timber cruising</td>
<td>110.2%</td>
<td>101.2%</td>
</tr>
<tr>
<td>Marking trees for harvesting</td>
<td>-50.0%</td>
<td>-10.2%</td>
</tr>
<tr>
<td>Mechanical site preparation</td>
<td>6.9%</td>
<td>20.1%</td>
</tr>
<tr>
<td>Planting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>by hand</td>
<td>6.0%</td>
<td>-3.6%</td>
</tr>
<tr>
<td>by machine</td>
<td>73.9%</td>
<td>64.1%</td>
</tr>
<tr>
<td>Precommercial thinning</td>
<td>-37.3%</td>
<td>-69.8%</td>
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<tr>
<td>Fertilization</td>
<td>-21.7%</td>
<td>37.0%</td>
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### Table 13. Cost indices for forestry practices in the South from 1967 to 2012

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<tr>
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<td>161</td>
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